Beyond Sewering

Keeping Water Local

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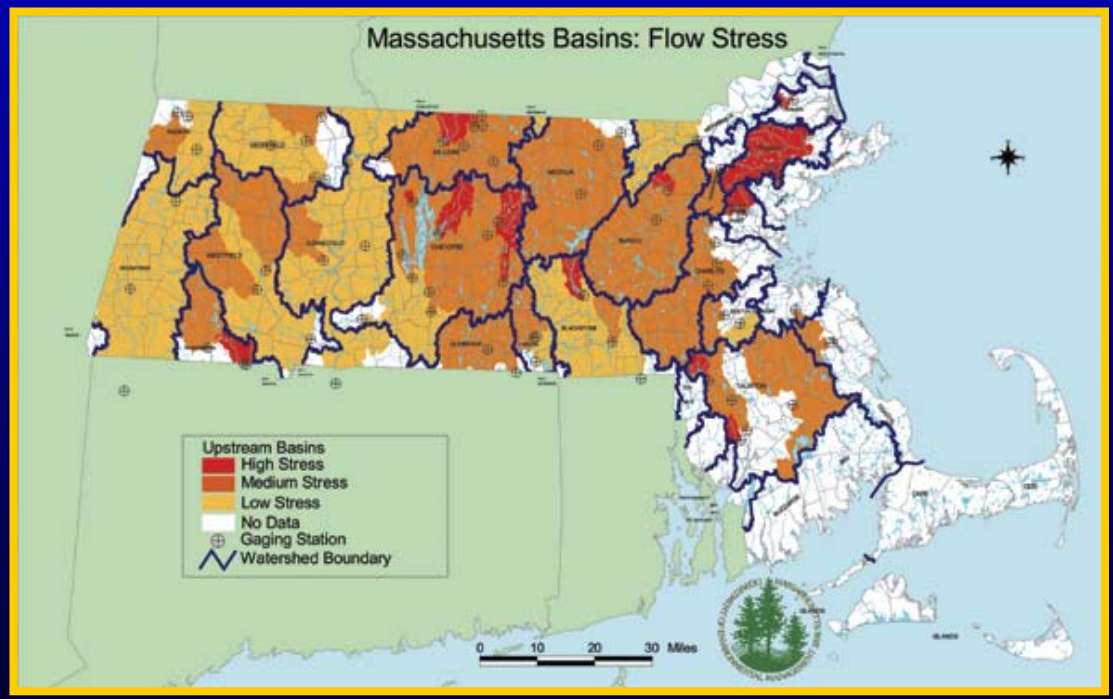
Water is a finite resource that needs to be managed to meet current future human needs as well as those of the environment.

Water quality and quantity are important to achieving healthy waters that are used for drinking water, fishing and swimming and that support life for the plants and animals on which we depend.

Water Quantity Problems

- Massachusetts receives a significant amount of precipitation – an average of 44 inches per year

Nevertheless, we have water quantity problems!

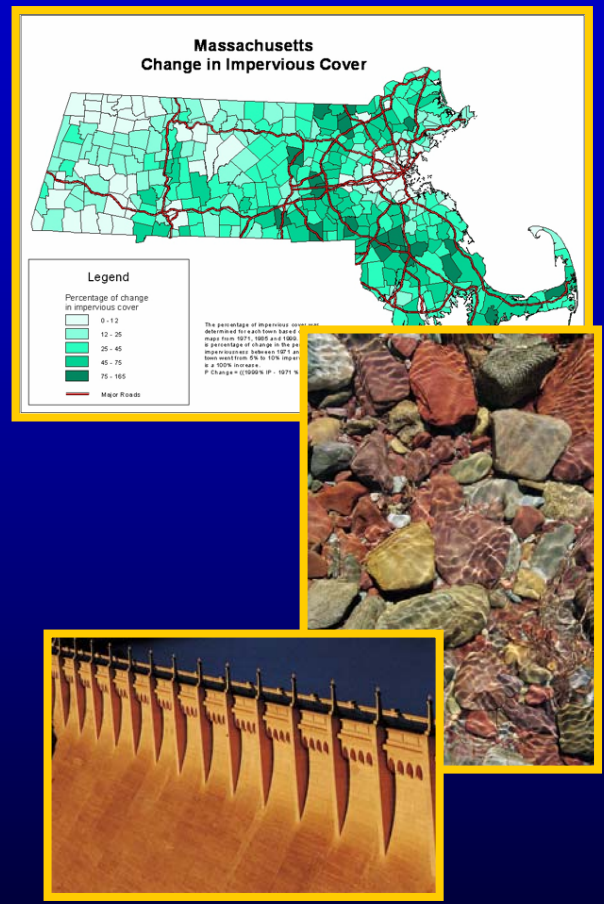


Water Quantity Problems

- Alarming changes in the fish population
- The Ipswich River – Only 4% of fish fluvial or flow dependent
- Precipitation has rivers and streams at highest levels in spring
- High summer water use depletes large volume of precipitation that occurs in spring

Other Causes of Problems

- Impervious surfaces - roads, parking lots, driveways, and rooftops – reduce recharge of groundwater
- Water withdrawals close to streams
- Transport of wastewater out of basin
- Infiltration and Inflow that takes clean water out of basin
- Dams



MassDEP is revising regulations and policies to address these problems.

- Wastewater
- Reclaimed Water Use
- Infiltration & Inflow
- Water Management Act
- Increased Stormwater Recharge

Current Title 5 Regulations

- 310 CMR 15 states:
  - ***(4) No new system shall be constructed, and no system shall be upgraded or expanded, if it is feasible to connect to a sanitary sewer , except in the following circumstances:***
    - ***The system is an alternative system approved for such use pursuant to 310 CMR 15.280 through 15.287 and the Department has made the determination:***
      - ***In approving the remedial use of an alternative system pursuant to 310 CMR 15.284 that any person using such system need not connect the facility to such sanitary sewer; or***
      - ***In granting provisional approval of an alternative system pursuant to 310 CMR 15.286 that the alternative system is likely to provide a level of environmental protection at least equivalent to that of a sewer; or***
      - ***In certifying an alternative system for general use pursuant to 310 CMR 15.288 that the performance of the alternative system will provide a level of protection to public health and safety and the environment that is at least equivalent to that of a sewer; or***
    - ***The owner of an existing system has obtained a variance from this requirement pursuant to 310 CMR 15.410 through 15.415.***

Proposed Title 5 Changes

- To promote recharge of stressed basins, improve low streamflow or address other local water resources needs, property owners may construct new Title 5 systems or upgrade existing ones EVEN if sewer system is available.

Title 5 Changes

- For new construction and remedial use
  - May use alternative system approved for use where sewer is available
  - May use a fully complying Title 5 system

Title 5 Changes

- For remedial use only
  - May construct a conventional system that complies with all requirements of Title 5 setbacks
  - May also decrease liquid depth of the septic tank from 4 to 3 feet and the maximum allowable depth of components from 36” to 72”

MassDEP is considering extending this provision to treatment plants with flows over 10,000 gpd that have to obtain a groundwater discharge permit.

Easy To Comply:
Cluster Developments

- Cluster Developments are defined as: ***Development on a parcel of land that uses less than traditional lot sizes in order to maintain at least 50 % of the parcel as open space. The open space must be deed restricted common area suitable for passive recreation and exclusive of wetlands. [The Department is specifically seeking comment on this definition]***

- Exempts cluster developments from the requirement that shared systems demonstrate that the design flow does not exceed the design flow if standard Title 5 systems were used.

Cluster Development & Title 5

- Change commonality determination to make it less likely that individual homes in cluster developments will be required to provide the higher level of treatment required for systems with a design flow greater than 2,000 per day.
- In making this determination, Boards of Health (with advice from MassDEP) may consider whether the proposed project provides recharge or is more densely developed or is a cluster type project that preserves open space

Easy to Obtain Disposal System Construction Permit

- Can use subsoil (B Horizon) if it percs to meet four feet of pervious soil requirement
- Do not have to do overnight soak for soils with slow perc rate
- Allows new construction in soils with perc rates up to 60 minutes per inch – existing since June 2004

Easy to Use Greywater Systems

- Composting toilets for nonresidential uses
- 50% reduction in soil absorption system
- Allows reduction of separation to groundwater for remedial use 2 feet if perc rate is less than 2 minutes per inch 3 feet if perc rate is greater than or equal to 3 feet per inch

Consumer Protection

- More training of system inspections and soil evaluators by the requirement of CEUs at time of renewal in 2009
- Improved enforcement ability against system inspectors, system installers, and soil evaluators

Keeping Water Local

- Nitrogen Aggregation Policy
  - Limit nitrogen to 440 gallons per acre
  - Allows use of credit land
  - Policy is a part of proposed revisions to Title 5
- 1999 Nutrient Loading Approach
  - Allows wastewater treatment plants to meet nitrogen limits at property boundary rather than at point of discharge
  - Provides flexibility for coming into compliance with the Groundwater Discharge Permitting Program requirements

Reclaimed Water Use

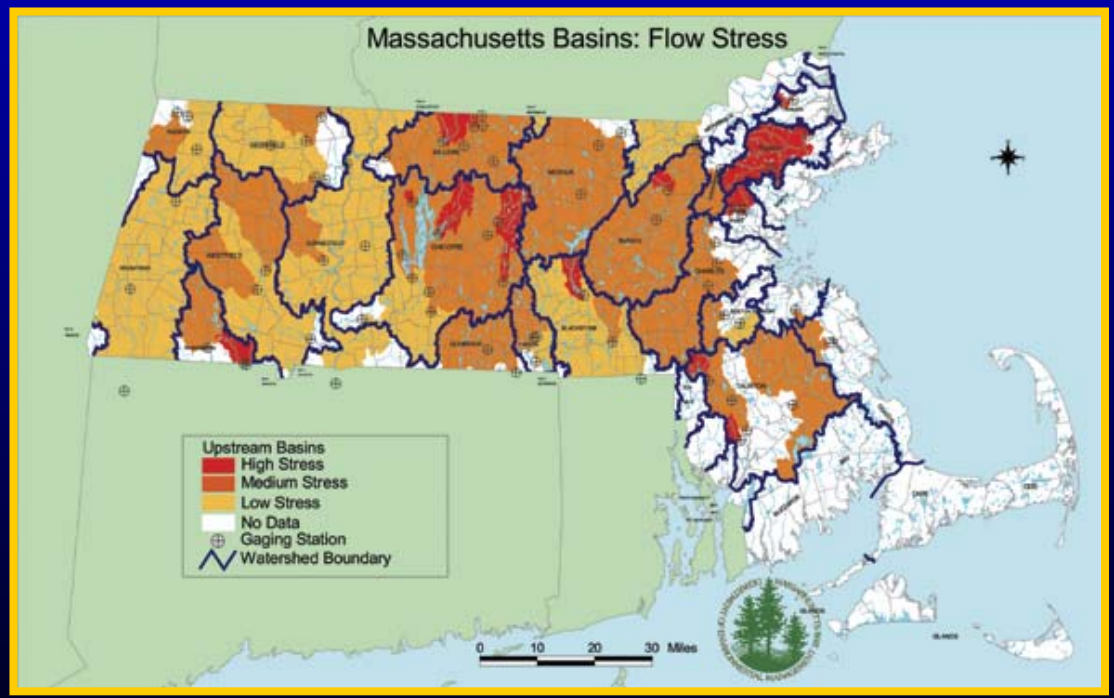
- Guidance allows treated wastewater to be used for irrigation, landscaping, artificially recharging aquifers, and toilet flushing
- Must be done in a manner that protects public health and the environment
- Must be virtually pathogen and contaminant free
- MassDEP is hiring Outreach Coordinator to encourage reclaimed water use

Infiltration & Inflow Removal

- Keep clean water from leaving basin through regional sewer systems
- New NPDES Permits require I/I Control Plans
- MassDEP requires infiltration and inflow removal in groundwater discharge permits where appropriate

Water Management Act

- High and medium stressed basins
- Water use increases
- Offsets



Stormwater Recharge

- NPDES Phase II Stormwater Permits
- Massachusetts Stormwater Policy – Standard # 3
  - Loss of annual recharge to groundwater should be minimized through the use of infiltration measures to the maximum extent practicable.
  - The annual recharge from the post-development site should approximate the annual recharge from the predevelopment or existing site conditions, based on soil type.
- Stormwater Advisory Committee
- MassDEP hiring an engineer

State Revolving Fund

- Since 2001, 85% of SRF financing has gone to repairing and upgrading existing municipally-owned infrastructure
- 2% of financing has gone into Comprehensive Wastewater Management Planning and stormwater planning
- The remaining 13% went to water and sewer systems in areas that have identified existing public health problems necessitating the projects.